



PATENT
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10/18/99

IN THE CLAIMS

Please cancel Claims 60 through 63, amend Claims 25, 39, 43, 46 and 56, and add Claims 64 through 77, as follows:

GROUP 3600

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K1 Sub 1

25. (Thrice Amended) A lock, comprising:

2 a shell containing a hollow recess defining a longitudinal axis and an interior
3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said
5 hollow recess;

6 a bar interposed between said shell and said cylinder plug to reciprocate generally
7 along a radial plane between a first position engaging both said shell and said plug while obstructing
8 rotation of said cylinder plug within said recess, and a second position accommodating said rotation,
9 said cylinder plug comprising:

10 a first base and a second base separated by an axial length of said cylinder plug from
11 said first base, said second base bearing means for supporting a cam; and

12 an electrical operator borne by said cylinder plug and rotatable with said cylinder
13 plug, said electrical operator being electrically operable to respond to a control signal by moving
14 between a first orientation and a second and different orientation providing obstruction of said bar.

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39. (Amended) The lock of claim 25, further comprising:

a [basic] logic circuit generating said control signal in response to a comparison

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3 between a code set within said logic circuit and a [date] data signal applied to said logic circuit;

4 a conductor provided by said plug, conveying said data signal to said logic circuit;

5 and

6 said electrical operator moving between said second orientation and said first

7 orientation in response to said control signal.

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1 43. (Amended) A lock, comprising:

2 a cylinder containing a hollow interior recess defining a longitudinal axis, and bearing

3 a slot within said recess; and

4 a plug rotatable from a rest orientation around said longitudinal axis while resident

5 within said hollow recess relative to said cylinder; and

6 an elongate member positioned between said cylinder and plug while extending into

7 said slot, and providing simultaneous engagement of said cylinder and said plug while said plug

8 remains in said rest orientation;

9 said plug comprising:

10 a first base bearing an orifice spaced-apart from and separated by a mass of

11 said plug from said keyway;

12 a second base separated by an axial length of said plug from said first base,

13 said second base disposed to support a cam, said mass being penetrated by a radially oriented

14 aperture;

15 an exterior surface extending between said first base and said second base;

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16 a conductor having a terminal exposed to an exterior of said first base through
17 said orifice;

18 an electronic logic circuit comprising a memory storing a code, said circuit
19 being borne by said plug and coupled to receive data signals via said conductor, said circuit
20 generating control signals in dependence upon a comparison between said code and
21 information borne by said data signal; [and]

22 an electrical operator mounted within said aperture, said operator having a
23 movable member [travelling] traveling in dependence upon said control signals between a
24 first position relative to said exterior surface maintaining said simultaneous engagement and
25 a second and different position relative to said exterior surface accommodating movement
26 between said plug and said cylinder; and

27 a component biasing said movable member to maintain said simultaneous
28 engagement.

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1 46. (Amended) A lock, comprising:

2 a shell containing a hollow recess defining a longitudinal axis and an interior
3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said
5 hollow recess;

6 a bar borne by said plug and rotatable with said plug relative to said shell, said bar
7 being interposed between said shell and said cylinder plug to reciprocate generally along a radial

8 ^{xy 08 cont} plane between a first position engaging both said shell and said cylinder plug while obstructing
9 rotation of said cylinder plug within said recess, and a second position accommodating said rotation,
10 said cylinder plug comprising:
11 a first base and a second base separated by an axial length of said plug from said first
12 base, said second base bearing means for supporting a cam; and
13 an electrical operator being electrically operable to respond to an electrical control
14 signal by moving obstructing movement of said bar between said first position and said second
15 position in response to a first state of said control signal and [accommodating] moving within a
16 second and different plane not coextensive with said radial plane in response to application of said
17 control signal to accommodate said movement of said bar in response to a second and different-state
18 of said control signal.

1 ^{105 Sub} 56. (Amended) A lock, comprising:

2 a shell containing a hollow recess defining a longitudinal axis and an interior
3 cylindrical surface;

4 a plug rotatable around said longitudinal axis while resident within said hollow
5 recess;

6 an elongate member interposed between said shell and said plug to travel generally
7 along a radial direction between a first position engaging both said shell and said plug while
8 obstructing rotation of said plug within said recess, and a second position accommodating said
9 rotation;

10 said plug comprising:

11 a first base perforated by an aperture, and a second base separated by an axial
12 length of said plug from said first base, said second base bearing means for supporting a
13 cam;

14 a logic circuit borne by said plug and rotatable with said plug, conveying said
15 data signal between said aperture to said logic circuit; and

16 an electrical operator responding to said control signals by moving in a second
17 direction not aligned with said radial direction between a first orientation obstructing said
18 travel and relative operable movement between said shell and said plug while said electrical
19 operator is contained wholly within said plug, and a second and different orientation
20 accommodating said travel and said relative operable movement between said shell and said
21 plug.

1 ~~106 Sub~~ --64. A lock, comprising:

2 a shell containing a hollow recess defining a longitudinal axis and an interior
3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said
5 hollow recess, said cylinder plug comprising a first base and a second base separated by an axial
6 length of said cylinder plug from said first base, said second base bearing means for supporting a
7 cam;

8 a bar interposed between said shell and said cylinder plug to travel generally along

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9 a radial plane between a first position engaging both said shell and said plug while obstructing
10 rotation of said cylinder plug within said recess, and a second position accommodating said rotation;
11 a logic circuit generating an electrical control signal in response to a comparison
12 between a code set within said logic circuit and a data signal applied to said logic circuit;
13 an electrical conductor provided by said plug, conveying said data signal to said logic
14 circuit; and
15 an electrical operator borne by said cylinder plug and rotatable with said plug, said
16 electrical operator being electrically operable to respond to said control signal by moving between
17 a first orientation providing obstruction of said travel and a second and different accommodating said
18 travel.

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1 --65. A lock, comprising:

2 a shell containing a hollow recess defining a longitudinal axis and an interior
3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said
5 hollow recess, said cylinder plug comprising a first base and a second base separated by an axial
6 length of said cylinder plug from said first base, said second base bearing means for supporting a
7 cam;

8 a bar interposed between said shell and said cylinder plug to travel generally along
9 a radial plane between a first position engaging both said shell and said plug while obstructing
10 rotation of said cylinder plug within said recess, and a second position accommodating said rotation;

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11 a logic circuit generating a control signal in response to a comparison between a code
12 set within said logic circuit and a data signal applied to said logic circuit;
13 an electrical conductor provided by said plug, conveying said data signal to said logic
14 circuit; and
15 an electrical operator comprising an armature, said armature being borne by said
16 cylinder plug and rotating around said longitudinal axis with said plug, said electrical operator being
17 electrically operable to respond to said control signal by moving between a first orientation
18 providing obstruction of said travel and a second and different orientation accommodating said
19 travel.

1 --66. The lock of claim 65, with said electrical operator further comprising a coil of an
2 electrically conducting material that is borne by said cylinder plug and wound to drive said armature
3 to move from one of said first and second orientations to the other of said first and second
4 orientations in response to said control signal.

1 --67. The lock of claim 65, with said electrical operator further comprising a coil of an
2 electrically conducting material that is borne by said cylinder plug and wound to drive said armature
3 to move from said first orientation to said second orientation in response to said control signal.

4 --68. The lock of claim 65, with electrical operator further comprising a coil of an
5 electrically conducting material that is borne by said cylinder plug and wound to drive said armature

6 to rotate around an arc in response to said control signal.

1 --69. The lock of claim 65, with said electrical operator further comprising a coil of an
2 electrically conducting material that is borne by said cylinder plug and wound to drive said armature
3 to reciprocate along a radial axis that is transverse to said radial plane in response to said control
4 signal.

1 *Sub B13*
2 --70. A lock, comprising:

2 a shell containing a hollow recess defining a longitudinal axis and an interior
3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said
5 hollow recess, said cylinder plug comprising a first base and a second base separated by an axial
6 length of said cylinder plug from said first base, said second base bearing means for supporting a
7 cam;

8 a bar interposed between said shell and said cylinder plug to travel generally along
9 a radial plane between a first position engaging both said shell and said plug while obstructing
10 rotation of said cylinder plug within said recess, and a second position accommodating said rotation;

11 a logical circuit generating said control signal in response to a comparison between
12 a code set within said logic circuit and a data signal applied to said logic circuit;

13 an electrical conductor provided by said plug, conveying said data signal to said logic
14 circuit; and

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15 an electrical operator borne by said cylinder plug and rotatable with said plug, said
16 electrical operator being electrically operable to respond to an electrical control signal applied to said
17 electrical operator by moving along a geometrical construct other than to said radial plane between
18 a first orientation providing obstruction of said travel and a second and different orientation
19 accommodating said travel.

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1 --71. The lock of claim 70, with said electrical operator further comprising an armature and
2 a coil of an electrically conducting material that is borne by said cylinder plug and wound to drive
3 said armature to move along said geometric construct in response to said control signal.

1 --72. The lock of claim 70, with said electrical operator further comprising an armature and
2 a coil of an electrically conducting material that is borne by said cylinder plug and wound to drive
3 said armature to move along said geometric construct in response to said control signal from said
4 second orientation to said first orientation.

5 --73. The lock of claim 70, with said geometric construct comprising an arc and said
6 electrical operator further comprising an armature and a coil of an electrically conducting material
7 that is borne by said cylinder plug and wound to drive said armature to rotate around said arc in
8 response to said control signal.

1 --74. The lock of claim 70, with said geometric construct comprising a radial axis that is

2 transverse to said radial plane, and said electrical operator further comprising an armature and a coil
3 of an electrically conducting material that is borne by said cylinder plug and wound to drive said
4 armature to reciprocate along said radial axis in response to said control signal.

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1 / --75. A lock, comprising:

2 a shell containing a hollow recess defining a longitudinal axis and an interior
3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said
5 hollow recess, said cylinder plug comprising a first base and a second base separated by an axial
6 length of said cylinder plug from said first base, said second base bearing means for supporting a
7 cam;

8 a bar interposed between said shell and said cylinder plug to travel generally along
9 a radial plane between a first position engaging both said shell and said plug while obstructing
10 rotation of said cylinder plug within said recess, and a second position accommodating said rotation;

11 a logic circuit generating said control signal in response to a comparison between a
12 code set within said logic circuit and a data signal applied to said logic circuit;

13 an electrical conductor provided by said plug, conveying said data signal to said logic
14 circuit; and

15 an electrical operator borne by said cylinder plug and rotatable with said plug, said
16 electrical operator being electrically operable to respond to said control signal by moving along a
17 radial axis that is transverse to said radial plane, between a first orientation providing obstruction of

18 said travel and a second and different orientation accommodating said travel.

16. A lock, comprising:

1 a shell containing a hollow recess defining a longitudinal axis and an interior
3 cylindrical surface;

4 a cylinder plug rotatable around said longitudinal axis while resident within said
5 hollow recess, said cylinder plug comprising a first base and a second base separated by an axial
6 length of said cylinder plug from said first base, said second base bearing means for supporting a
7 cam;

8 a logic circuit generating said control signal in response to a comparison between a
9 code set within said logic circuit and a data signal applied to said logic circuit;

10 an electrical conductor provided by said plug, conveying said data signal to said logic
11 circuit;

12 an elongate bar exhibiting a greatest longitudinal dimension along a second axis that
13 extends transversely to said first base and to said second base, said bar being interposed between said
14 shell and said cylinder plug to travel generally along a radial axis that is transverse to said second
15 axis, between a first position engaging both said shell and said plug while obstructing rotation of said
16 cylinder plug within said recess, and a second position accommodating said rotation; and

17 an electrical operator borne by said cylinder plug and rotatable with said plug, said
18 electrical operator being electrically operable to respond to said control signal by moving along said
19 radial axis between a first orientation providing obstruction of said travel and a second and different

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orientation accommodating said travel.

✓ --77. A lock, comprising:

a shell containing a hollow recess defining a longitudinal axis and an interior cylindrical surface;

a cylinder plug rotatable around said longitudinal axis while resident within said hollow recess, said cylinder plug comprising a first base and a second base separated by an axial length of said cylinder plug from said first base, said second base bearing means for supporting a cam;

a logic circuit generating said control signal in response to a comparison between a code set within said logic circuit and a data signal applied to said logic circuit;

an electrical conductor provided by said plug, conveying said data signal to said logic circuit;

an elongate bar exhibiting a greatest longitudinal dimension along a second axis that extends transversely to said first base and to said second base, said bar being interposed between said shell and said cylinder plug to travel generally along a radial axis that is radial to said cylinder plug and transverse to said second axis, between a first position engaging both said shell and said plug while obstructing rotation of said cylinder plug within said recess, and a second position accommodating said rotation; and

an electrical operator borne by said cylinder plug and rotatable with said plug, said electrical operator being electrically operable to respond to a control signal by moving between a

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20 first orientation providing obstruction of said travel and a second and different orientation
21 accommodating said travel.

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--78. The lock of claim 25, with said electrical operator further comprising an armature and
2 a coil of an electrically conducting material that is borne by said cylinder plug and wound to drive
3 said armature to move from one of said first and second orientations to the other of said first and
4 second orientations in response to said control signal.

1 --79. The lock of claim 25, with said electrical operator further comprising an armature and
2 a coil of an electrically conducting material that is borne by said cylinder plug and wound to drive
3 said armature to move from said first orientation to said second orientation in response to said
4 control signal.

1 --80. The lock of claim 25, with electrical operator further comprising an armature and a
2 coil of an electrically conducting material that is borne by said cylinder plug and wound to drive said
3 armature to rotate around an arc in response to said control signal.

1 --81. The lock of claim 25, with said electrical operator further comprising an armature and
2 a coil of an electrically conducting material that is borne by said cylinder plug and wound to drive
3 said armature to reciprocate along a radial axis that is transverse to said radial plane in response to
said control signal.